ABSTRACT

MUHAMAD SAMSII. The Tea Parasite (*Scurrula oortiana*) Extract as Immunomodulator and Antitumor on the Infection of Marek’s Disease Virus (MDV) Serotype 1 Oncogenic in Chicken. Under supervision of MARTHEN B.M. MALOLE, WASMEN MANALU, and EKOWATI HANDHARYANI.

Marek’s disease virus (MDV) is one of oncogenic herpesvirus which has a DNA as nucleic acid. It causes immunosuppression and cancer in chicken. This study was aimed to find out the mechanism of Marek’s disease in layer commercial chickens which administered orally with extract of tea parasite (*Scurrula oortiana*) in dose of 10 mg/kg bw through drinking water, then the chickens were infected by intraperitoneal oncogenic MDV in dose $1.0 \times 10^3$ TCID$_{50}$. The study used 60 layer commercial day old chicks (DOC) divided into four group of treatments. The treatments were group A (administered *S. oortiana* extract and without MDV infection), B (neither *S. oortiana* nor MDV infection), C (administered *S. oortiana* extract and with MDV infection), and D (none administered *S. oortiana* extract, but with MDV infection). This study was conducted for 60 days.

The analysis showed that MDV oncogenic caused immunosuppression at day post infection (p.i) and recovery to be normal based on relative weight of bursa of Fabricius and thymus, and also diameter of the bursa of Fabricius follicle at 40 of post infection. Moreover, the MDV caused cancer at day 20 of post infection, and increased pathogenicity based on the amount of the proventriculus lymphocyte, and pathogenesis of liver cancers at day 40 of post infection. The extract of *S. oortiana* had a capability as an immunomodulator as indicated by the increase of relative weight of bursa of Fabricius and thymus at day 20 of post infection. and the increase of diameter of bursa of Fabricius follicle at day 40 of post infection.

Its effect on nonspecific immunity was indicated with the increase of inducible nitric oxide synthase (iNOS) enzyme at 20 of day p.i. Its effect on the humoral immunity was indicated with the increase of antibody titre against MDV at day 20 of post infection. The special property of *S. oortiana* extract as antiviral was indicated by the inhibition the MDV development on the bursa of Fabricius at day 20 of post infection. The extract also decrease the amount of lymphocyte of submucous proventriculus and liver pathogenesis at day 40 of post infection.

Keywords : Marek’s disease virus, *Scurrula oortiana*, inducible nitric oxide synthase, and lymphocyte